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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION N
10/065,247	09/27/2002	David Dean	GEMS 0149 PU	2123
27256	7590	11/03/2004	EXAMINER	
ARTZ & ARTZ, P.C.			JAWORSKI, FRANCIS J	
28333 TELEGRAPH RD.			ART UNIT	
SUITE 250			PAPER NUMBER	
SOUTHFIELD, MI 48034			3737	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/065,247	<b>Applicant(s)</b> DEAN ET AL.	
	<b>Examiner</b> Jaworski Francis J.	<b>Art Unit</b> 3737	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 17 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 7 - 12 is/are allowed.
- 6) ☒ Claim(s) 1-3,5,6,13-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 4 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

[ Parenthesized claim number(s) pertain to the specific claim or claims being addressed by the immediately preceding rejection. ]

Claims 1 – 3, 5 - 6, 13 – 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hedlund et al (US6516282) alone or further in view of Emeric et al (US2002/0148604).

Hedlund in and of itself is directed to control of magnetic resonance imager gradient temperature via coil coolant and flow rate per temperature sensing of bore temperature (col. 9 lines 34 – 39 and col. 1 lines 40 – 65), and the control loop shown in Fig. 5. However Hedlund et al note col. 2 lines 43 – 49 that conventional systems act to limit gradient coil power via interruption hence it would be inherent to have thermostatic controller 80 also dynamically interrupt coil power thereby limiting it based upon the measured temperature reaching an excessive or over-temperature threshold. In the alternative, Emeric et al in a related work notes in para [0035] final four lines that thermal controller 80 may act on the bore temperature sensed by temperature sensor 102 to so limit the applied power if the temperature is excessive as similarly defined in para [0004] therein. (Claim 1).

Such dynamic temperature feedback necessarily includes an initial or start condition and temperature tracking thereafter with comparison against the overload or boundary temperature levels. (Claims 2 – 3).

In Hedlund et al, a thermal prediction software operate on multiple subsystem sensor inputs of which temperature from 102 is a part. First order operations would be an obvious simplification within a predictive feedback loop. (Claims 5, 17).

In Hedlund et al actuation/de-actuation occurs in response to measured temperature with respect to the threshold. (Claims 6, 13, 15).

Hedlund et al per se admits of 'at least one ' i.e. one or more temperature sensors for same, see col. 9 lines 37 – 39. (Claim 14)

***Allowable Subject Matter***

Claims 4, 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


Claims 7 – 12 are allowed.

Bechtold et al (US6777939) of ineffective date is cited as of interest for Fig. 3 wherein power to gradient coil 200 is thermostatically controlled by 303 which may be a temperature sensor tracking temperature from initial startup to maximum permissible temperature increment (see col. 4 lines 17 – 24) whereupon thermal controller 301 makes comparison with a boundary limit constant which limits the amount of power to the gradient coil such that the homogenizing field shims will not drift in their properties due to the temperature change caused by the gradient coil.

Any inquiry concerning this communication should be directed to Jaworski Francis J. at telephone number 703-308-3061.

FJJ:fjj

10-30-2004

  
Francis J. Jaworski  
Primary Examiner